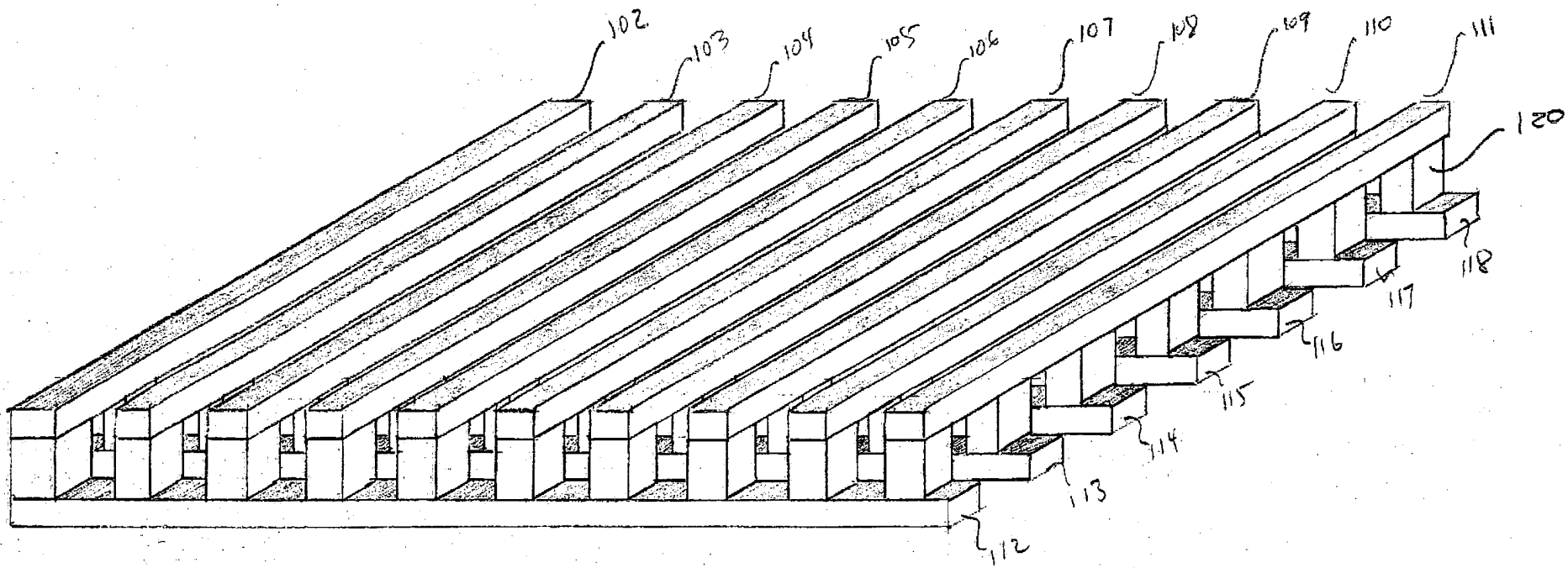
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114
113
112

Figure 1

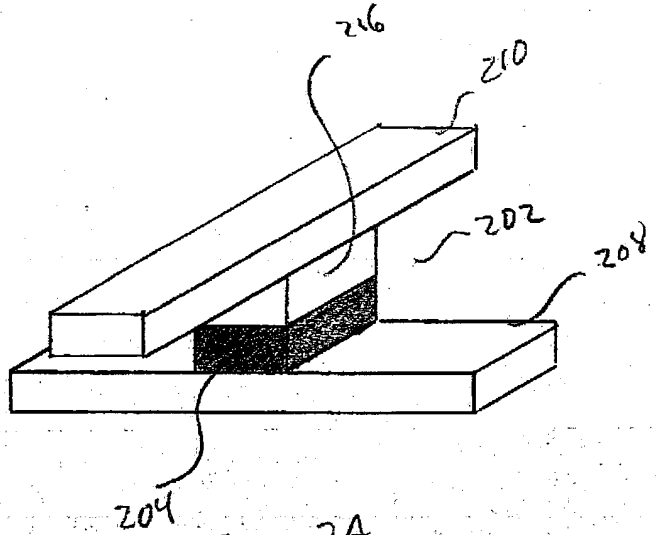


Figure 2A

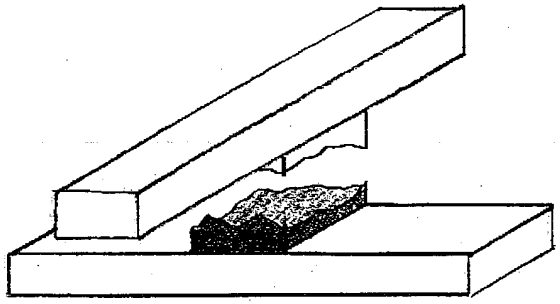


Figure 2B

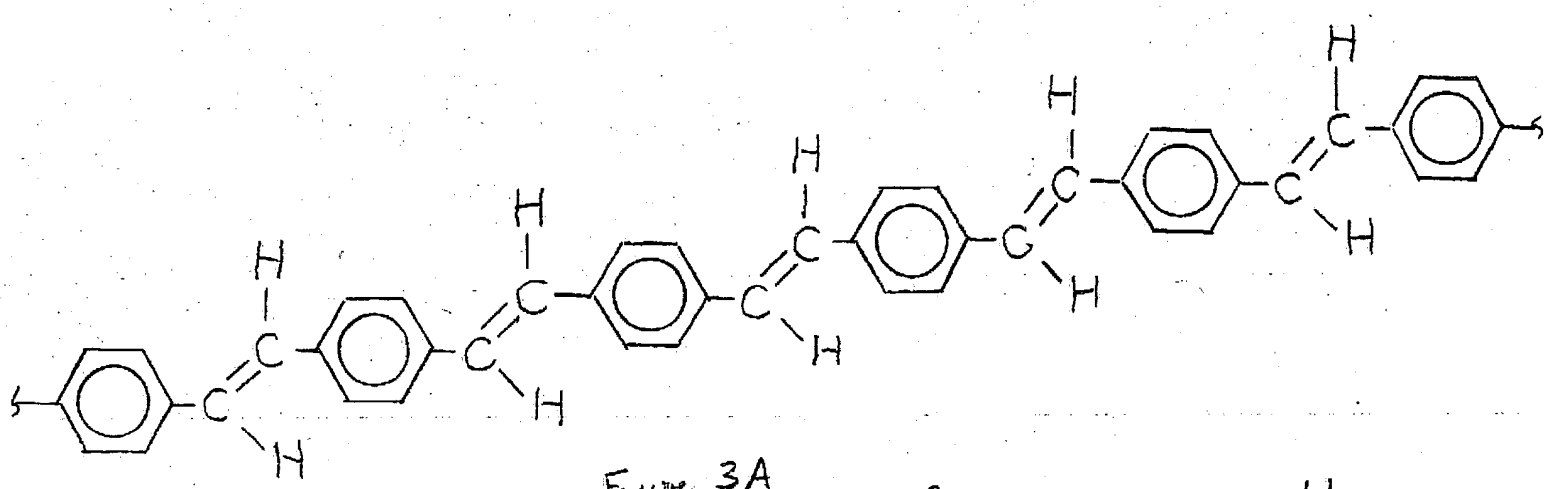


Figure 3A

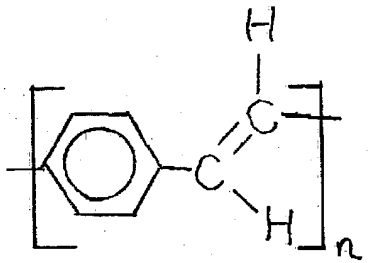


Figure 3B

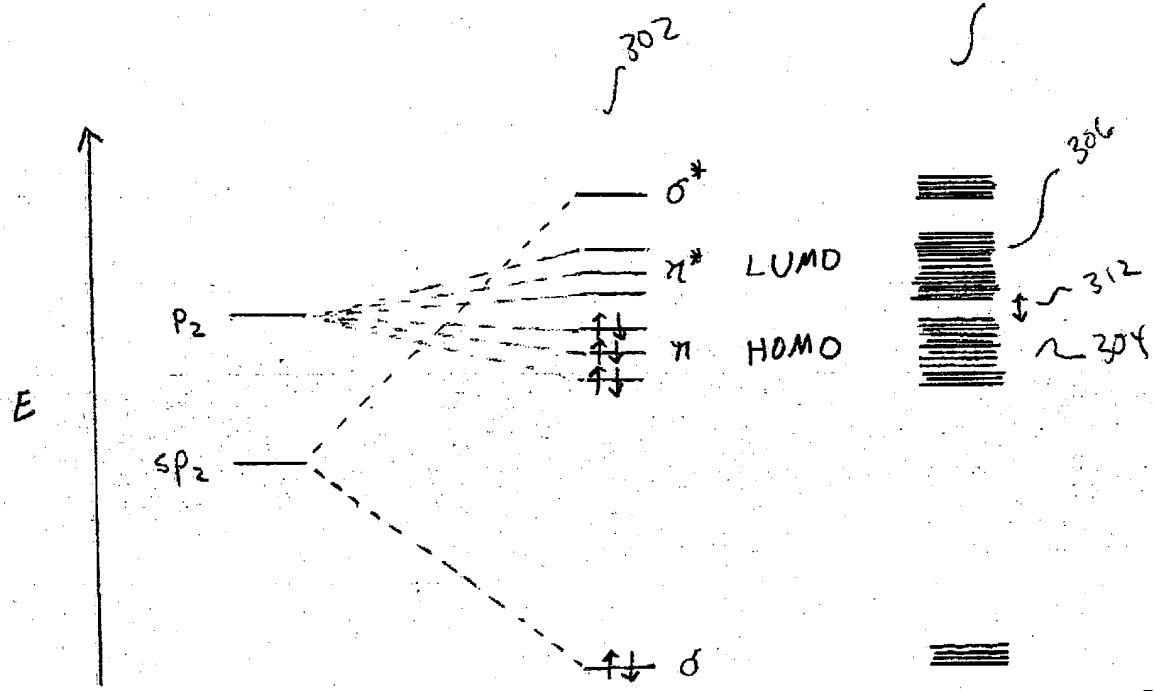


Figure 3C

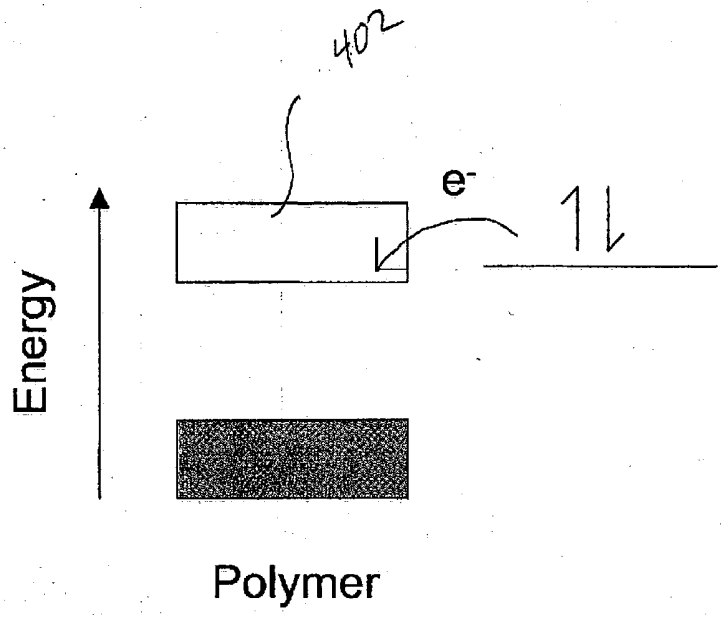


Figure 4A

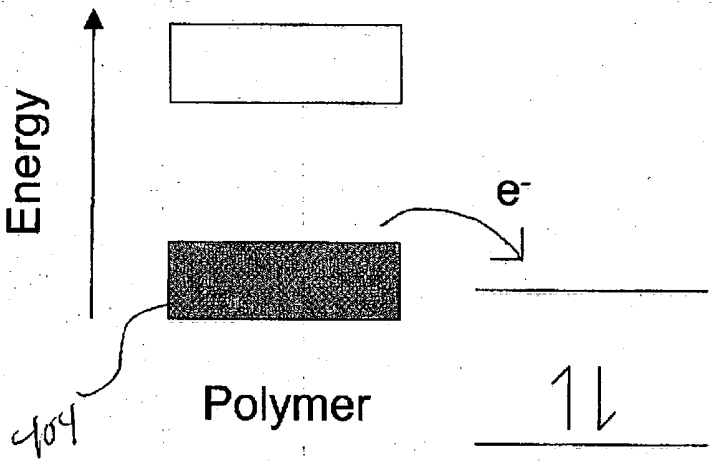


Figure 4B

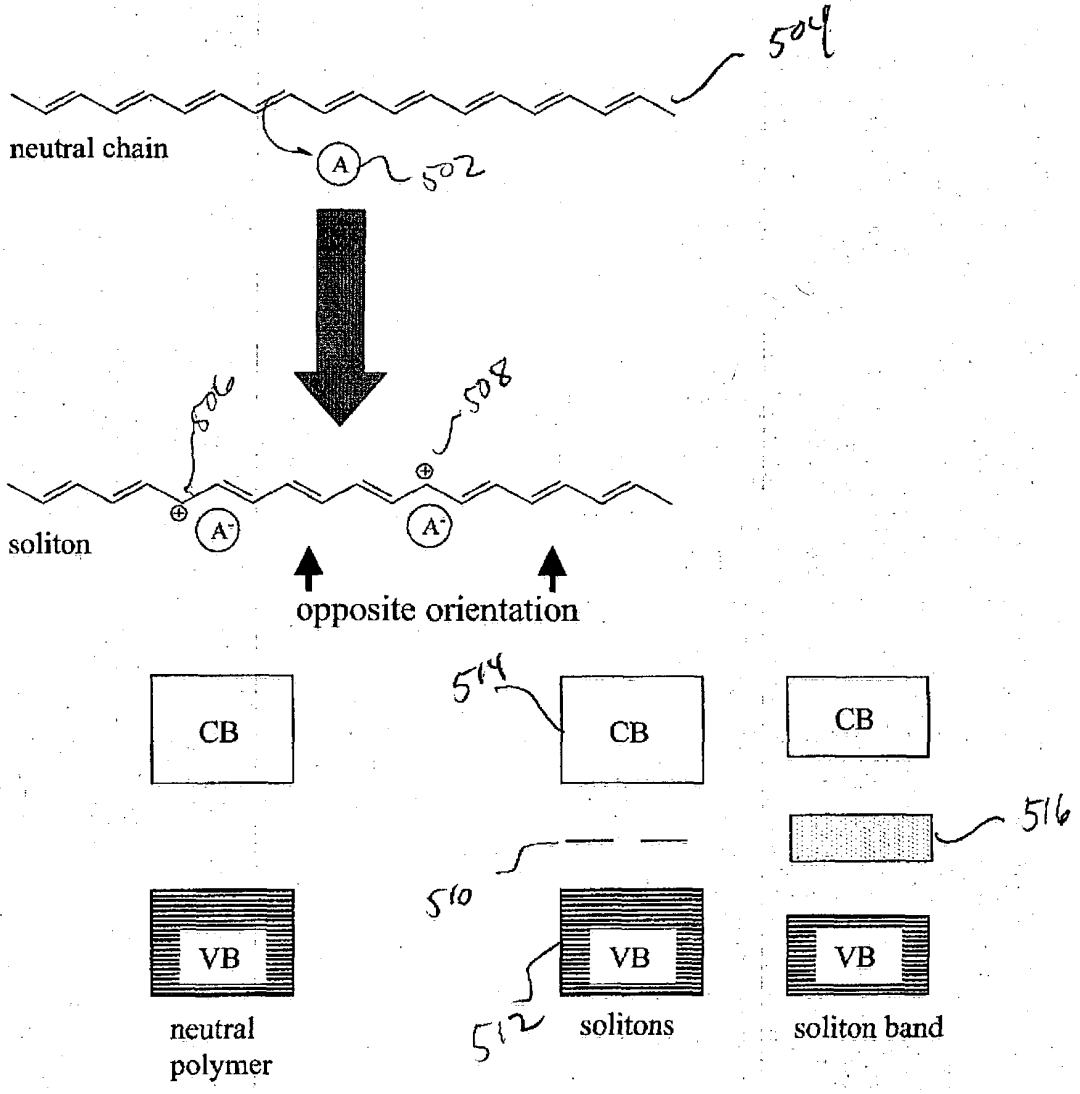

504
neutral chain
A
502
506
508
soliton
A-
A-
opposite orientation
514
CB
CB
CB
516
510
VB
VB
VB
neutral polymer
512
solitons
soliton band

Figure 5

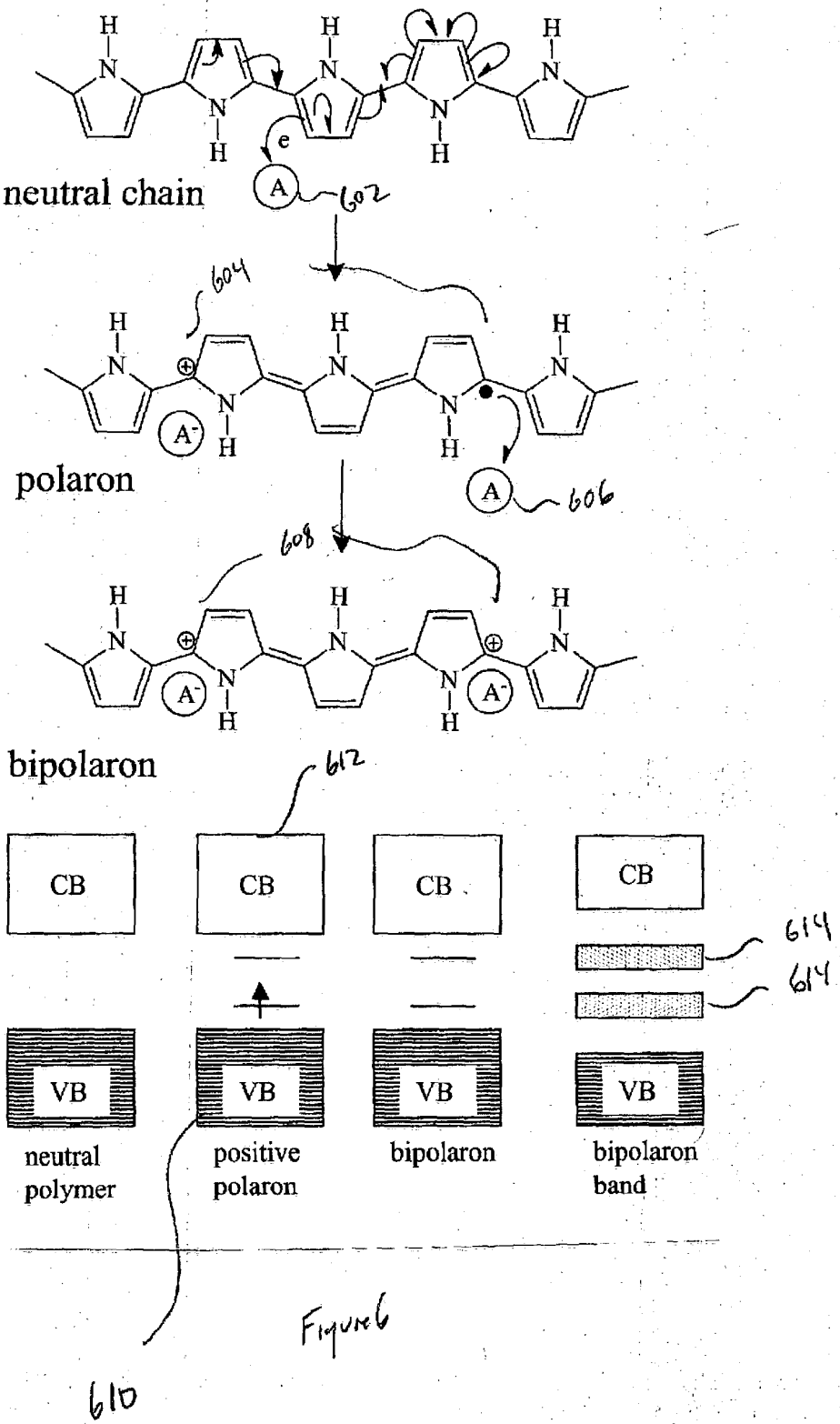

neutral chain
A
602
604
polaron
A-
606
608
bipolaron
612
CB
CB
CB
CB
614
614
VB
VB
VB
VB
neutral polymer
positive polaron
bipolaron
bipolaron band
610

Figure 6

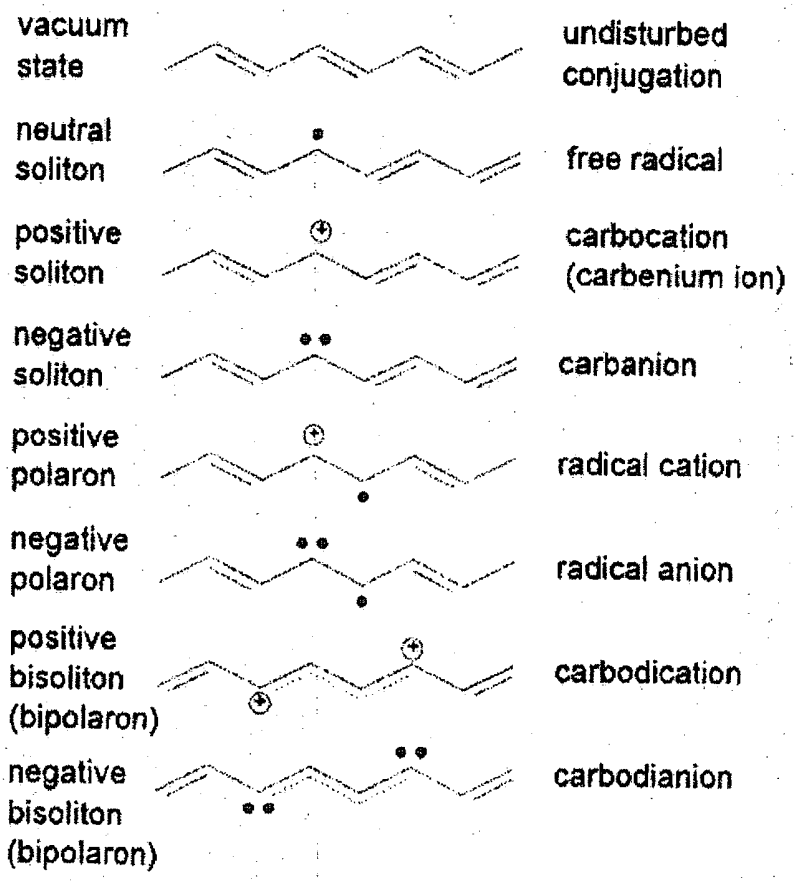
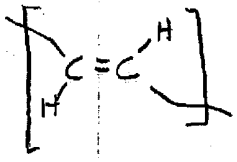
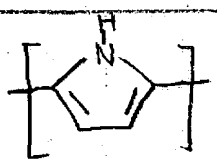
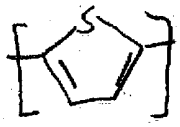
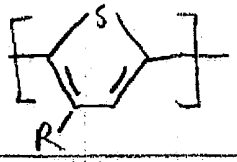
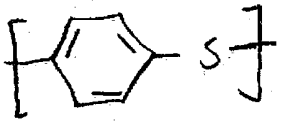
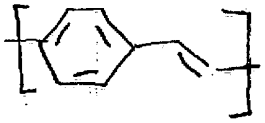
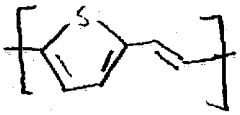
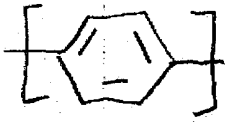
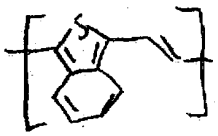
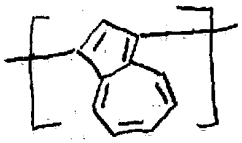
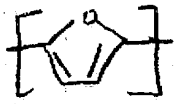
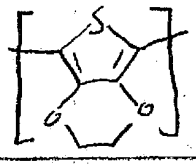
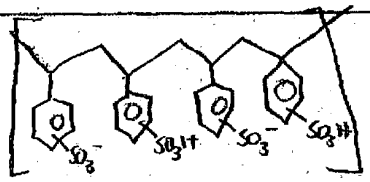

vacuum state
undisturbed conjugation
neutral soliton
free radical
positive soliton
carbocation (carbenium ion)
negative soliton
carbanion
positive polaron
radical cation
negative polaron
radical anion
positive bisoliton (bipolaron)
carbodication
negative bisoliton (bipolaron)
carbodianion

Figure 7

polymer	structure	dopants
polyacetylene		I_2, Br_2, Li, Na, AsF_5
polypyrrole		BF_4^-, ClO_4^-
polythiophene		BF_4^-, ClO_4^-
poly (3-alkyl thiophene)		BF_4^-, ClO_4^-
polyphenylene sulphide		AsF_5
polyphenylenevinylene		AsF_5
polythienylenevinylene		AsF_5
polyphenylene		AsF_5, Li, Na

polymer	structure	dopants
polyisothianaphthelene		BF_4^-, ClO_4^-
polyazulene		BF_4^-, ClO_4^-
polyfuran		BF_4^-, ClO_4^-
polyaniline		HCl
poly (3,4- ethylene dioxythiophene)		

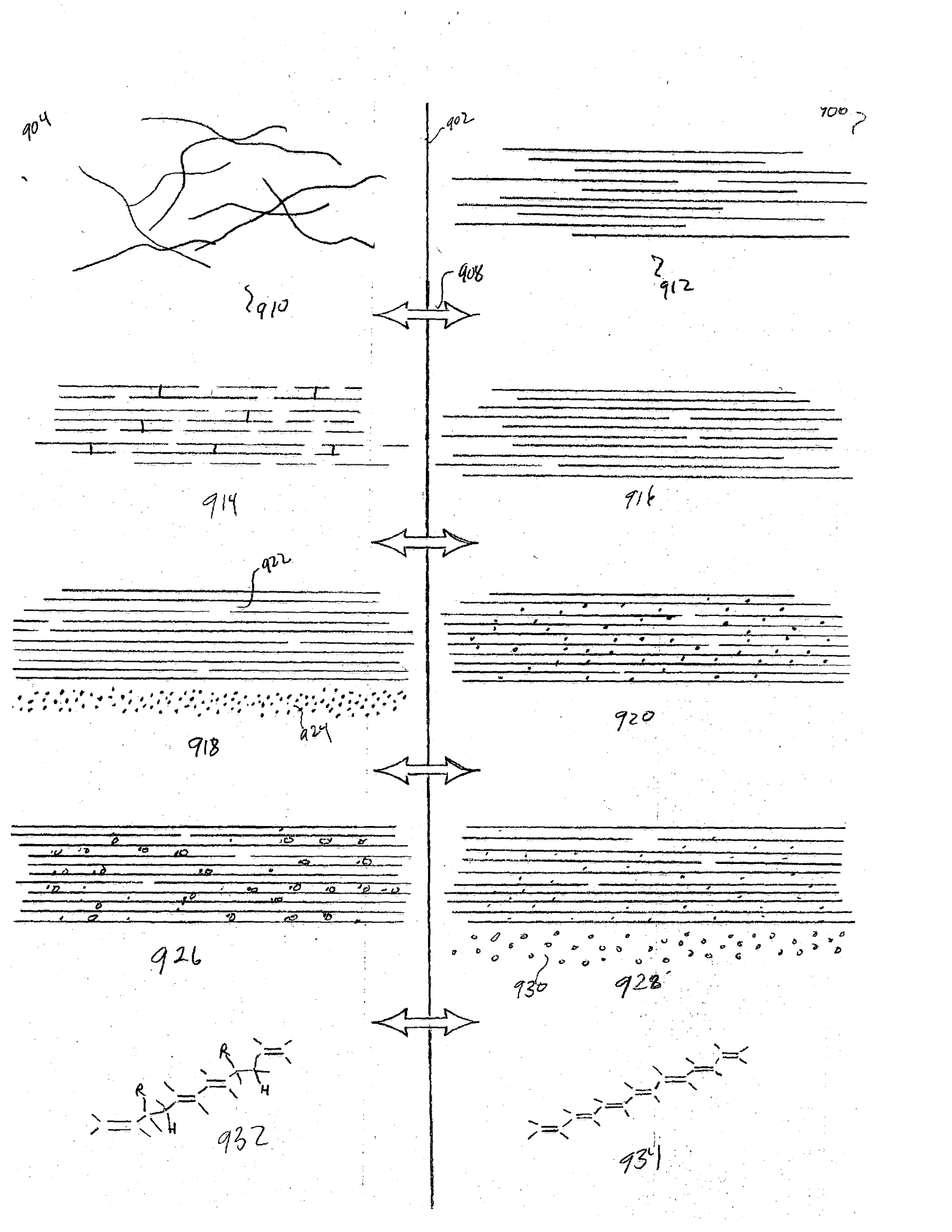

904
902
700
910
908
912
914
916
922
918
924
920
926
930
928
R
H
R
H
932
934

Figure 10

Figure 11